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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,023	07/14/2003	Naga Bhushan	030168U2	8631
23696 7590 03/01/2007 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			EXAMINER MUI, GARY	
			ART UNIT	PAPER NUMBER
			2616	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		03/01/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.		Applicant(s)	
	10/620,023		BHUSHAN ET AL.	
	Examiner		Art Unit	
	Gary Mui		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 3 of the preliminary amendment, the recitation of "U.S. Patent Application Serial No. 10/620,023, entitled, 'Reverse Rate Indicator Detection,' having Attorney Docket No. 030168U2, filed July 14, 2003~~concurrently herewith~~ and assigned to the assignee hereof, and" is incorrect because the applicant is attempting to make a reference to a co-pending application that is the application itself.

Appropriate correction is required.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claims 5 and 13 are objected to under 37 CFR 1.75 because of the following informalities:

For claim 5 line 1, the occurrence of "a set of hypothesis" seems to refer back to "a set of hypotheses" previously recited in claim 1, if this is true, it is suggested to the applicant to change "a set of hypothesis" to --the set of hypotheses--. Similar problem exists for claim 13 line 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 – 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 1 line 6, the occurrence of “reduce the set of hypotheses” is vague and indefinite because it is not clear how to reduce the set of hypotheses, because there is only one set of hypotheses. Similar problem exists for claim 9 line 7. Also on line 7, the occurrence of “each of the reduced set of hypotheses” is vague and indefinite because it implies more than one set, however there is only one set of hypotheses claimed. Similar problem exists for claim 9 line 8.

For claim 4 line 6, the occurrence of “the maximum metric” has no antecedent basis. Similar problem exists for claim 12 line 6.

Claims 2, 3, 5 – 8, 10, 11, and 13 – 16 are rejected because they depend on a rejected claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (US 5,914,950) in view of Cheng et al. (US 6,999,425 B2).

For claims 1, 2, 9, and 10, Tiedemann, Jr. et al. teaches a method comprising of determining a set of hypotheses for decoding the message, wherein the set of hypotheses includes all combinations of available data rate and the number of subpackets (see column 4 and 5 lines 61 – 67 and 1 – 6); decoding the message using each of the reduced set of hypotheses (see column 7 lines 44 – 46); and the message is a reverse rate indicator (see column 7 line 47 – 51). Tiedemann, Jr. et al. fails to teach the method comprising of using historical transmission information to reduce the set of hypothesis.

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Cheng et al. from the same field teaches an algorithm that gives a reverse link load value that is a moving average of the reverse link load from a time frame that goes from the distant past up to the preset. Each new calculation by the algorithm updates the most recently calculated reverse link load value by adding an increment load value to the previously obtained value and is dependent upon the number of frames in a window. The algorithm here disclosed does not ignore the previously calculated load value when computing the new load value. Actually, each new calculation by the algorithm builds on the previously calculated load value and modifies the previously obtained load value and modifies the previously obtained load value to include the most recently obtained load value (see column 5 lines 38 – 49). Through Cheng et al. example, described in column 6, there are load percentages and data rates associated with them and by using the algorithm Cheng et al. will find a load percentages that is optimal for performance by limiting the rate to meet the load percentage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tiedemann, Jr. et al. hypotheses determination to include Cheng et al. algorithm of reducing the hypotheses so that the system can maintain a high Quality of Service because all active users will have a connection and will not be forced to be dropped from the network.

Allowable Subject Matter

10. Claims 3 – 8 and 11 – 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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11. The following is a statement of reasons for the indication of allowable subject matter:

For claims 3 and 11, the prior art fails to show alone or in combination the method or apparatus wherein each RRI codeword carries, N_{info} information bits, satisfying: $2^{N_{info}} \geq N_{rate} \times N_{group}$.

For claims 4 – 8 and 12 – 16, the prior art fails to show alone or in combination the method or apparatus of determining metrics for each possible state for receiving reverse rate indicator; determining a sequence detection window length; evaluating metrics for each state over the detection window length; and selecting a reverse rate indicator symbol based on the maximum metric.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Butler et al. (US 5,774,496), Packer (US 5,802,106), Rostoker et al. (US 6,111,863), Laasko (US 6,671,512 B2), Kim et al. (US 7,054,275 B2), Kim et al. (US 2002/0015388 A1), Bae et al. (US 2002/0097697 A1), Cheng et al. (US 2002/0105974 A1), Koo (US 2002/0136286 A1), Odenwalder et al. (US 2003/80072296 A1), Attar et al. (US 2004/0038697 A1), Chakravarty et al. (Non Patent Literature/An Algorithm for Reverse Traffic Channel Rate Control for cdma2000 High Rate Packet Data System), Attar et al. (Non Patent Literature/A Reverse Link Outer-Loop Power Control Algorithm for cdma2000 1xEV Systems), and Esteves (Non Patent Literature/On the Reverse Link Capacity of cdma2000 High Rate Packet Data Systems).

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Mui whose telephone number is (571) 270-1420. The examiner can normally be reached on Mon - Fri 10 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GM

1-13-2007

KWANG BIN YAO
PRIMARY EXAMINER